

NEUROCOLPUS REUTER: KEY WITH FIVE  
NEW SPECIES.

(HEMIPTERA, MIRIDAE)

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For a number of years the writer has had in mind a careful study of *Neurocolpus* material. Recent work on a monograph of Illinois Miridae has made it necessary that I arrive at some conclusion regarding the variable species, *nubilus* Say and allies. Some results of this study are herewith presented in a key with descriptions of five new species. Good specific characters have been found in the structure of the antennae, while some species differ in the length of rostrum. Three of the new species are recorded from New York and added to the list brings the total number of known Miridae up to 306 species for the state.

*Neurocolpus tiliae* n. sp.

Allied to *nubilus* Say but distinguished by the relatively longer first antennal segment, also by the longer rostrum which exceeds posterior margins of hind coxae.

♂. Length 5.7 mm., width 2.3 mm. Head: width .996 mm., vertex .476 mm. Rostrum, length 2.55 mm., exceeding posterior margins of hind coxae and touching upon fourth ventral segment. Antennae: segment I, length 1.43 mm., slightly compressed, greatest width .237 mm. near middle, clothed with erect, flattened black hairs, intermixed with erect, slightly longer, simple pale hairs, orange yellow, irregularly marked with reddish to fuscous dots; II, 2.03 mm., slender, becoming clavate on apical third (width .15 mm.), pale, thickened part dark red to blackish; III, .78 mm., yellowish, apical third reddish to black; IV, .74 mm., fuscous. Pronotum: length 1.25 mm., width at base 1.82 mm., basal margin distinctly sinuate on middle.

Dorsal aspect yellowish to orange red, hemelytra with a considerable number of yellowish spots, larger and in part confluent on cuneus; scutellum paler, irregularly marked with dark granulate reticulations; pronotum yellowish, usually darkened by hypodermal reddish granulations, propleura pale, coxal cleft crossed by two irregular dark rays. Membrane fuscous, a rounded spot each side touching margin, discal spot, also bordering cuneus within areoles, paler. Hemelytra clothed with golden, slightly sericeous, recumbent pubescence, intermixed with some simple, pale to fuscous hairs, pronotum with much longer hairs. Body beneath pale to yellowish, sides

of thorax and abdomen darkened with reddish and fuscous, two paler longitudinal lines running through the dark color. Legs pale to yellowish, hind femora darkened on apical half with reddish and fuscous, also provided with a few flattened black hairs; tibiae pale to reddish, not distinctly banded.

♀. Length 5.6 mm., width 2.3 mm. Head: width .996 mm., vertex .476 mm. Antennae: segment I, length 1.47 mm., width .238 mm.; II, 1.95 mm., width of clavate part .173 mm.; III, .86 mm.; IV, .86 mm. Pronotum: length 1.25 mm., width at base 1.77 mm. Very similar to the male in form and coloration.

*Holotype*: ♂, July 11, 1922, St. Anthony Park, Ramsey County, Minnesota (H. H. Knight); author's collection. *Allotype*: same data as the type. *Paratypes*: 48♂, ♀, taken with the types on *Tilia americana* where the species was breeding. ♀, July 14, 7♂, ♀, July 24, 1924, topotypic (H. H. Knight). ♂, ♀, July 11, topotypic; ♂, July 11, 1921, Lake City (A. A. Nichol). ♂, 2♀, July 12, 1922, topotypic (C. Johnson). IOWA—♂, June 21, ♀, June 24, 1929, Ames (H. H. Knight); on *Tilia americana*. ♀, July 4, 1929, Ames (H. A. Stabe), ♀, July 7, 1931, Traer (Drake & Harris). ILLINOIS—♂, July 17, 1896, Algonquin. 4♀, July 24, 1892, Galesburg (Stromberg). ♀, July 4, 1915, Urbana. ♀, June 8, 1933, Frankfort (Mohr & Townsend). NEW YORK—♂, July 29, 1927, ♂, July 25, 1929. Albany (N. Y. S. coll. A3510).

#### *Neurocolpus jessiae* n. sp.

Allied to *nubilus* Say but distinguished by the relatively shorter first antennal segment and by the pale hind femora with black apices.

♂. Length 6.3 mm., width 2.34 mm. Head: width 1.08 mm., vertex .43 mm. Rostrum, length 2.5 mm., extending to near hind margins of posterior coxae. Antennae: segment I, length 1.25 mm., slightly compressed, greatest width (.22 mm.) near middle, the black scale-like hairs only moderately conspicuous, intermixed with a few more erect black bristles, brownish black, closely and irregularly spotted with pale; II, 2.64 mm., slender, distal half gradually tapered to thicker apically, black, basal half more yellowish; III, 1.08 mm., black, pale at base; IV, 1.11 mm., black. Pronotum: length 1.34 mm., width at base 1.95 mm.

Dorsum chiefly black, basal half of cuneus, spots on embolium and scutellum, and more or less broadly on anterior half of pronotum, pale to yellowish; body beneath pale to yellowish, sides of thorax and venter more or less infuscated.

Legs pale, apical one-fourth of hind femora black, front and middle femora reticulate with fuscous apically; tibiae pale, front and middle pair with knees, apices and two narrow rings between fuscous; hind tibiae with basal one-fourth and broad band just below middle, black, apices fuscous; tarsi yellowish, apical segment largely black. Genital claspers not exhibiting evident specific characters.

♀. Length 6.5 mm., width 2.3 mm. Head: width 1.08 mm., vertex .47 mm. Antennae: segment I, length 1.3 mm., moderately compressed, greatest width .22 mm.; II, 2.6 mm.; III, 1.04 mm.; IV, 1. mm. Pronotum: length 1.34 mm., width at base 1.99 mm. Very similar to the male in form and coloration.

*Holotype*: ♂, July 3, 1921, Hollister, Missouri (Jessie Knight); author's collection. *Allotype*: same data as the type. *Paratypes*: 6♂, taken with the types. 2♂, July 18, 1915, Springfield, Missouri (H. H. Knight). IOWA—♂, July 29, 1928, Ames (H. H. Knight). ♂, July 4, 1929, Ames (H. A. Stabe). ILLINOIS—11♂, 15♀, July 20, 2♂, 9♀, July 24, 1889, Urbana (C. A. Hart), "from panicles of elder fruit"; also two nymphs with the same label which indicates that the species was breeding on this host plant. MASSACHUSETTS—♀, July 29, 1916, Pigeon Cove (Chris E. Olsen). NEW YORK—♀, August 4, 1923, Ithaca (J. L. Buys). MISSISSIPPI—♂, June 8, 1929, Carthage; 2♀, June 13, 1929, Starksville (H. G. Johnston). TEXAS—♀, June 24, 1917, Wharton (H. H. Knight). WISCONSIN—♂, July 14, Madison. ONTARIO, CANADA—♂, ♀, July 12, 1915, Simcoe (H. G. Crawford), "on apple."

Named in honor of my wife who collected the best series of specimens, from which the types are selected.

### *Neurocolpus rubidus* n. sp.

Allied to *nubilus* Say but distinguished by the shorter first antennal segment and in general aspect by the reddish coloration.

♂. Length 6 mm., width 2.1 mm. Head: width 1 mm., vertex .41 mm. Rostrum, length 2.3 mm., just attaining posterior margins of hind coxae. Antennae: segment I, length 1.04 mm., compressed, greatest width (.22 mm.) near middle, reddish, irregularly but closely marked with yellowish, usual flattened black hairs abundant, intermixed with somewhat longer pale to fuscous bristle-like hairs; II, 2.16 mm., slender, gradually thickened (width .12 mm.) on apical half, yellowish, apical half reddish; III, .82 mm., fuscous, pale at base; IV,

.83 mm., black. Pronotum: length 1.12 mm., width at base 1.73 mm., moderately sinuate on basal margin.

General coloration reddish, in dark specimens fuscous appearing on hemelytra; embolium and scutellum with several yellowish spots; membrane dark fuscous, a pale spot each side on margin, veins dark, apical curve of cubitus reddish. Dorsum clothed with golden sericeous pubescence, intermixed with simple pale to fuscous hairs, with distinct black hairs on pronotum. Femora reddish, hind pair with a distinct pale spot above at slightly beyond middle; tibiae yellowish, two narrow reddish rings on front and middle pair, hind pair reddish on middle and basal one-fourth.

♀. Length 6.2 mm., width 2.34 mm. Head: width 1.06 mm., vertex .46 mm. Antennae: segment I, length 1.12 mm.; II, 2.16 mm.; III, .86 mm.; IV, .87 mm. Pronotum: length 1.25 mm., width at base 1.9 mm. Very similar to the male in form and coloration.

*Holotype*: ♂, August 2, 1915, Batavia, New York (H. H. Knight); author's collection. *Allotype*: same data as the type. *Paratypes*: 6♂, 1♀, taken with the types. ♂, August 1, ♂, August 3, ♀, August 19, 1913; 3♂, 2♀, August 10, 1916, Batavia, New York (H. H. Knight).

#### *Neurocolpus arizonae* n. sp.

Color aspect suggestive of *mexicanus* Dist., but distinguished by the short, non-inflated apex of first antennal segment and by the shorter rostrum.

♂. Length 6 mm., width 2.16 mm. Head: width 1.10 mm., vertex .43 mm. Rostrum, length 1.95 mm., only reaching to middle of intermediate coxae. Antennae: segment I, length 1.02 mm., slightly compressed, greatest width (.22 mm.) near middle, simple and scale-like hairs relatively short, brownish black, closely and irregularly spotted with pale; II, 2.64 mm., yellowish, apical third slightly thickened and blackish; III, .64 mm., yellowish, apex blackish; IV, .51 mm., yellowish to fuscous. Pronotum: length 1.27 mm., width at base 2.03 mm.

Hemelytra blackish, embolium and cuneus with pale spots; membrane fuscous, usual pale spots at each side and within base of larger areole, veins fuscous, apical angle of cubitus whitish; scutellum fuscous to black, apex with rather large white spot; pronotum with pale ground, becoming fuscous each side of median line and on collar. Clothed with silvery, sericeous pubescence and intermixed with simple fuscous hairs, also with some golden sericeous pubescence on hemelytra; basal half of pronotum with several tufts of erect black hairs.

Femora brownish black, marked with numerous small dots and spots, tibiae banded with black and pale.

♀. Length 6.6 mm., width 2.47 mm. Head: width 1.12 mm., vertex .476 mm. Antennae: segment I, length 1.21 mm., width .26 mm.; II, 2.51 mm.; III, .69 mm.; IV, .52 mm. Pronotum: length 1.31 mm., width at base 2.08 mm. Slightly more robust than the male and generally somewhat paler in color.

*Holotype*: ♂, May 10, 1924, Tucson, Arizona (A. A. Nichol); author's collection. *Allotype*: same data as the type. *Paratypes*: 8♂, ♀, taken with the types. ARIZONA—♂, May 9, Salt River Mts., alt. 1300 ft.; ♂, 2♀, May 20, 1928, Empire Mts., alt. 5000 ft.; 3♂, 2♀, May 27, 1928, Rincon Mts., alt. 3300 ft.; ♀, June 7, 1926, Tucson, alt. 4000 ft. (A. A. Nichol). 2♀, May, 1929, Tucson; 3♂, May 9, 1929, Santa Rita Mts. (E. D. Ball). ♀, May 6, 1915, Phoenix (A. K. Fisher). 2♀, April 17, 2♀, April 26, 1916, Sabino Canyon, Santa Catalina Mts. (J. F. Tucker). TEXAS—♂, ♀, April 27, 1932, College Station (J. C. Gaines).

#### *Neurocolpus johnstoni* n. sp.

Allied to *mexicanus* Dist., but distinguished by the shorter first antennal segment and by the uniformly reddish brown coloration.

♂. Length 5.8 mm., width 2.12 mm. Head: width 1.06 mm., vertex .40 mm. Rostrum, length 2.46 mm., scarcely attaining posterior margins of hind coxae. Antennae: segment I, length 1.12 mm., greatest width (.28 mm.) at the moderately inflated apex, with pale bristles among the erect, black scale-like hairs, reddish brown with paler markings; II, 2.29 mm., gradually thickened from base to .13 mm., near apex, pale yellowish, reddish brown on apical third; III, .75 mm., pale to fuscous apically; IV, .69 mm., blackish. Pronotum: length 1.21 mm., width at base 1.73 mm.

General coloration rather uniformly reddish brown, apex of scutellum yellowish white, body more reddish beneath. Dorsum clothed with silvery, sericeous pubescence and intermixed with pale and blackish simple hairs. Femora reddish, hind pair darker, irregularly marked with paler spots; tibiae pale, hind pair reddish on basal fourth, with an obsolete fuscous band beyond middle, front and middle tibiae with narrow reddish ring at middle of basal half; tarsi blackish, paler at base.

*Holotype*: ♂, September 10, 1930, College Station, Texas (H. G. Johnston), collected in light trap; author's collection. *Paratype*: ♂, taken with the type; collection of H. G. Johnston.

KEY TO SPECIES OF NEUROCOLPUS.

1. Antennal segment I widest at the inflated apex ..... 2  
    Antennal segment I not wider at apex ..... 4
2. Rostrum just attaining hind margin of middle coxae; color uniformly yellowish or fulvous ..... *simplex* Van D.  
    Rostrum surpassing the middle coxae; otherwise colored ..... 3
3. Antennal segment I just equal to half the length of segment II; uniformly dark reddish, apex of scutellum white or yellowish. **johnstoni** n. sp.  
    Antennal segment I equal to three-fifths the length of segment II; coloration varied with fuscous and black. *mexicanus* Dist.
4. Antennal segment I three-fifths or more the length of segment II ..... 7  
    Antennal segment I not or only slightly exceeding one-half the length of segment II ..... 5
5. Hind femora pale, apical one-fourth black ..... **jessiae** n. sp.  
    Hind femora fuscous or reddish on basal half ..... 6
6. Antennal segment I equal to or slightly greater than half the length of segment II; femora and first antennal segment chiefly reddish and irrorate with paler ..... **rubidus** n. sp.  
    Antennal segment I not equal to half the length of segment II; femora and first antennal segment chiefly brownish and irrorate with pale ..... **arizonae** n. sp.
7. Antennal segment I nearly equal to three-fourths the length of segment II; rostrum exceeding posterior margins of hind coxae ..... **tiliae** n. sp.  
    Antennal segment I not equal to more than two-thirds the length of segment II; rostrum not exceeding posterior margins of hind coxae ..... *nubilus* Say